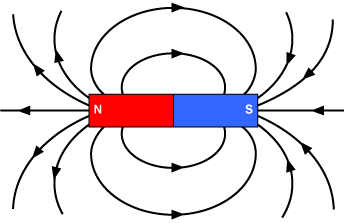
What is a magnet?

A MAGNET is any object that produces its own **magnetic field** that interacts with other **magnetic fields**. A MAGNETIC FIELD is an invisible force that surrounds a magnetic.

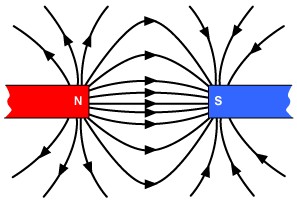
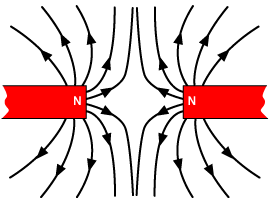
\*Remember: A force is a push or pull! SO, a magnet is any objects that causes a push or pull on another object through an invisible force called a magnetic field. MAGNETIC FIELD LINES illustrate the structure of a magnetic field.

Magnets have TWO poles: **North Pole** and **South Pole**. The magnetic field lines start at a magnet’s North Pole and end at the South Pole.



The MAGNETIC FORCE is caused by the magnet’s magnetic field and the points in direction of the field lines. If two north poles or two south poles are facing each other you can see that the field lines are moving away from each other. If a North Pole and a South Pole are facing each other, then the field lines go straight from the North Pole to the South Pole of the second.

(Repel) (Attract)



OPPOSITE POLES ATTRACT AND LIKE POLES REPEL.

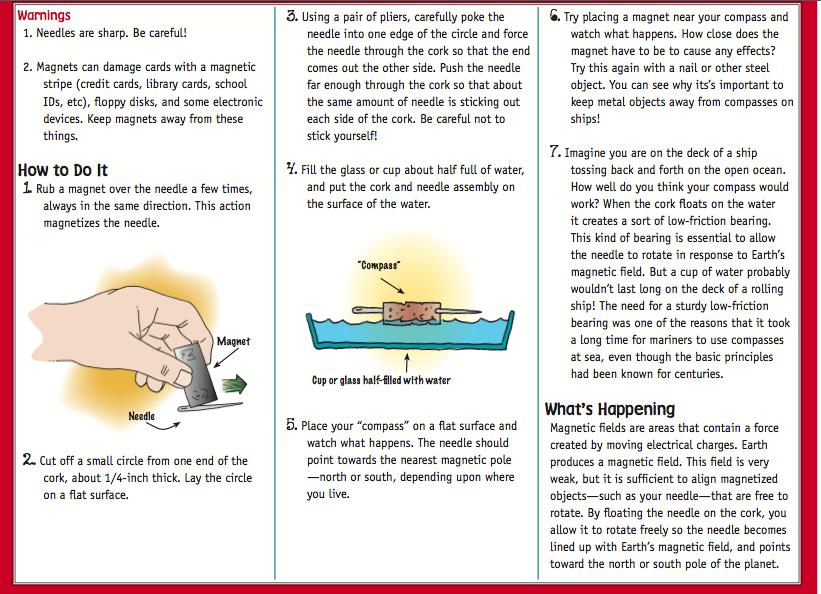
* Field is WEAK when lines are spread out
* Field is STRONG when lines are close together

PHYSICS EXPLORATORIUM

BASIC MAGNETISM

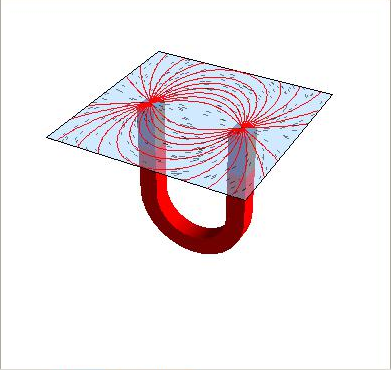
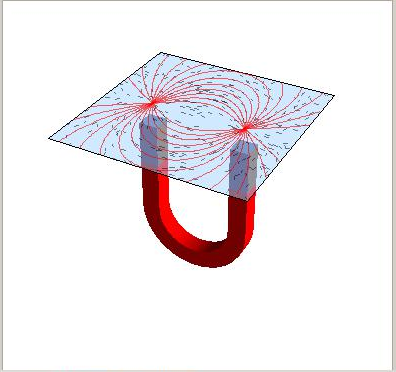
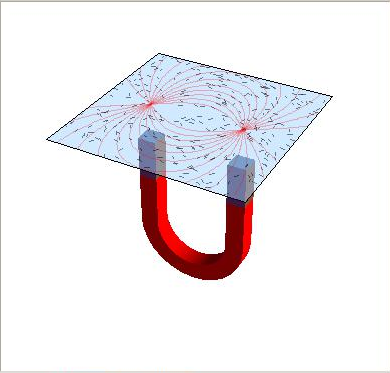
(Magnetic Dry Erase Board)

HOW TO MAKE A COMPASS



DEMONSTRATION # 1

Sprinkle iron filings on a sheet of paper and bring a magnet up close to the underside of the paper



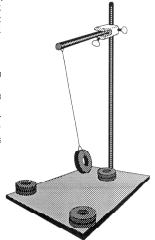
We can see the filings line up along the lines of the magnetic fields, illustrating its structure.

DEMONSTRATION #2

Flying Paper Clip

DEMONSTRATION #3

Strange Attractor



The force of gravity and the simple pushes and pulls act together to form different patterns of the swinging pendulum.

\*Rearrange the magnets to see what pattern you can produce!